

UNDER REVISION

**The Consumer Recovery Outcomes System (CROS 3.0):
Assessing Clinical Status and Progress in Persons with Severe and Persistent Mental Illness**

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Abstract

The development of the Consumer Recovery Outcomes System (CROS 3.0) is described. This assessment procedure is designed to evaluate recovery-oriented clinical status and progress from two perspectives in the case of psychiatric clients with severe and persistent mental illnesses – the consumer and a clinical staff member. The scales that comprise CROS 3.0 are Treatment Satisfaction, Daily Functioning, Coping with Clinical Symptoms, Quality of Life, and Hope for the Future. Psychometric characteristics of the two forms are described along with initial findings regarding the reliability and validity of the scales and changes in scale scores over time.

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The Consumer Recovery Outcomes System (CROS 3.0):

Assessing Clinical Status and Progress in Persons with Severe and Persistent Mental Illness

Regular assessment of clinical progress is a virtually indispensable component of any psychiatric treatment program. The increasing cost of mental health care has led to the growing insistence that the outcomes of such care be ascertained if only to identify which treatments are effective for which clients and at what cost. With the growing acceptance of the need to monitor clinical progress has come a growing interest in the development of reliable and appropriate assessment instruments and in the identification and application of sound assessment methodology that can inform clinical practice.

The Consumer Recovery Outcomes System (CROS 3.0) consists of two brief integrated assessment questionnaires that are periodically completed by consumers with severe and persistent mental illnesses and clinical staff responsible for their care in order to review clinical progress. The questionnaire set has two principal goals – multidimensional assessment of clinical status and identification of areas of agreement and disagreement between raters that may provide useful information for treatment planning.

While a number of earlier studies have contrasted the consumer's self-report and the assessment of the clinician, the measurement of clinical progress in the case of clients with severe and persistent mental illness poses special challenges. Assessment must be broadened beyond symptom status to areas such as the ability of consumers to maintain an independent lifestyle, engage in fulfilling activities, function within the context of the family and the larger social community, and establish meaningful interpersonal relationships and a satisfying quality of life (President's New Freedom Commission on Mental Health Executive Summary Footnote b., 2003).

These expanded assessment domains reflect the growing importance of the field of psychiatric rehabilitation and two relatively new orientations to treatment – the “strengths perspective” and the “recovery-oriented perspective.” The strengths perspective asserts that

severely disabled psychiatric clients must be seen as possessing symptoms, to be sure, but also capacities, talents, competencies, possibilities, visions, values, and hopes (e.g., Carr, E. G., et al., 2002; Saleebey, 1996). The recovery-oriented approach emphasizes the capacity of individuals to regain purpose and meaning in their lives while still living with psychiatric illnesses.

In keeping with these concepts, particularly pertinent in the case of consumers with severe and persistent mental illness, CROS 3.0 assesses four domains - Hope for the Future, Daily Functioning, Coping with Clinical Symptoms, and Quality of Life. In addition, the consumer form includes an assessment of Treatment Satisfaction. All questions are answered in a four-choice Likert format. Questions on the scales of the two forms parallel each other so that scale scores or responses to individual items derived from the consumer report and staff report may be directly compared and contrasted.

CROS 3.0 represents the third version in the development of this assessment instrument. The initial draft of CROS (CROS 1.0) was based on results of consumer and clinician focus group meetings designed to identify questionnaire items that were strengths-based, clinically relevant to a recovery-oriented treatment approach, and that avoided jargon and negative connotations. Complete information on the development and analysis of the preliminary versions of CROS can be obtained from the authors.

Psychometrics of the Consumer and Staff CROS 3.0

Analysis of psychometric characteristics of CROS 3.0 is based on an initial sample of 585 consumers and staff. Of this original group, nine cases were excluded because of excessive missing data, defined as 5% or more of all questionnaire items. In the relatively infrequent remaining cases where there were missing data, modal, that is, most likely, responses were imputed for each missing item in order to minimize bias (Little & Rubin, 2002).

About one-third of the cases were obtained from a mental health center in a medium-size Colorado city; another third came from five rural mental health centers in Colorado; and the final

third came from a mental health center in a small Nebraska city. Mean age of the consumer population was 45 with a range of 22 to 98 years. Forty-seven percent of the consumers were males. About 80% of the consumer population were Caucasian, while 16% were Hispanic. The balance were classified as Black, Asian, Native Americans, or Other. The most common primary diagnosis (49%) was some type of schizophrenic disorder; 20% had a primary diagnosis of depressive disorder; 17% had a primary diagnosis of bipolar disorder.

Examination of consumer and staff scale scores on CROS 3.0 (see Table 1) reveals that scores on all nine scales are negatively skewed. Consumer scores are consistently more skewed than staff scores. In addition, consumer scale score means are consistently and significantly ($p < .01$) higher than staff scale score means.

Insert Table 1 about here

The oblique factor analysis of the 35 items on the CROS 3.0 consumer questionnaire indicates a satisfactory relationship to the five conceptualized scales (see Table 2). The first factor (questions 6-12) has heaviest weightings on all seven items on the Hope for the Future scale. The second factor (questions 27-35) has heaviest weightings on all nine items on the Quality of Life scale. The third factor (questions 1-5) has heaviest weightings on all five items on the Treatment Satisfaction scale. The fourth factor (questions 21-26) has heaviest weightings on all six items on the Coping with Clinical Symptoms scale. The fifth factor (questions 13-20) has heaviest weightings on five of the eight items on the Daily Functioning scale. The three remaining items hypothesized to be part of the Daily Functioning scale are actually more heavily weighted on the Hope for the Future scale. With the exception of these three items, all of the 35 question responses were more heavily weighted on the scale to which they were hypothesized to belong than to any other scale. The Daily Functioning scale is the weakest of the five consumer CROS 3.0 scales.

Insert Table 2 about here

The oblique factor analysis of the 30 items on the CROS 3.0 staff questionnaire reveals a somewhat more satisfactory relationship with the hypothesized scales (see Table 3). The first factor (questions 1-7) has heaviest weightings on all seven items on the Hope for the Future scale. The second factor (questions 22-30) has heaviest weightings on eight of the nine items of the Quality of Life scale. The third factor (questions 8-15) has heaviest weightings on seven of the eight items of the Daily Functioning scale. The fourth factor (questions 16-21) has heaviest weightings on all six items of the Coping with Clinical Symptoms scale. The two items that were not most clearly associated with their hypothesized scales were each more heavily weighted on the Hope for the Future scale.

Insert Table 3 about here

As noted in Table 4, consumer and staff scale score correlations are moderately high. It should also be noted that scores among the consumer scales and among the staff scales are substantially correlated with each other even though the hypothesized factorial structure is supported. Scale score percentile norms for each of the scales are available from the authors.

Insert Table 4 about here

Demographic and Diagnostic Relationships with CROS 3.0 Scale Scores

Age.

Age is very weakly positively correlated with both consumer and staff scale scores: Correlations range from .08 to .19. Since higher scores on all scales represent better functioning, increasing age is slightly associated with higher functioning levels.

Gender.

Gender is significantly associated with six of the nine consumer and staff scale scores. Male consumers score significantly higher than female consumers on Hope for the Future ($p < .01$), Coping with Clinical Symptoms ($p < .001$), and Quality of Life ($p < .03$). Staff scored male consumers higher than female consumers on Hope for the Future ($p < .003$), Coping with Clinical Symptoms ($p < .001$), and Quality of Life ($p < .007$). A high level of agreement between consumers and staff can be seen in these gender differences – differences that suggest that male consumers describe themselves and are described by staff as less disabled than female consumers.

Ethnicity.

Only Caucasians and Hispanics were sufficiently numerous to allow for statistical comparisons. No significant differences on any of the CROS 3.0 consumer scale scores were found when these two groups were compared. In contrast, Hispanic consumers were judged by staff as significantly higher than Caucasians on Hope for the Future ($p < .02$) and Quality of Life ($p < .01$). These differences may reflect cultural factors that tend to reduce actual or perceived psychiatric disability in the Hispanic group.

Homelessness.

Of the entire sample, 23 consumers were reported as being chronically homeless. When the scale scores of these homeless consumers were contrasted with scores of consumers who were

not chronically homeless, eight significant differences were found – all favoring consumers who were not chronically homeless. These differences include consumer-rated Treatment Satisfaction ($p<.001$), Hope for the Future ($p<.01$), Daily Functioning ($p<.03$), Coping with Clinical Symptoms ($p<.001$), and Quality of Life ($p<.001$); and staff-rated Hope for the Future ($p<.04$), Coping with Clinical Symptoms ($p<.001$), and Quality of Life ($p<.001$). These findings speak to CROS 3.0 validity in that it might be hypothesized that homelessness was associated with higher levels of social dysfunction.

Alcohol and Medication Behavior.

Three questions regarding alcohol use and medication adherence were included as supplementary questions on the consumer and staff forms of CROS 3.0. These included: (1) “I believe my use of alcohol or street drugs interferes with my recovery from mental illness”; (2) “I take my psychiatric medication as prescribed”; and (3) “I believe taking my psychiatric medication helps with my recovery from mental illness.” Questions on the parallel staff forms were put in the third person. Consumer and staff response distributions to these three questions were highly skewed toward the favorable end of the distribution.

No significant association was found between replies to the first two questions and any of the consumer CROS 3.0 scale scores. Responses to the third question, however, were significantly associated with all scale scores. Correlations between responses to the question regarding consumers’ beliefs in the efficacy of psychiatric medication and CROS 3.0 scale scores ranged between .28 with Coping with Clinical Symptoms to .34 with Hope for the Future.

Staff responses to these three questions were not significantly correlated with any of the consumer scale scores but responses to two of the questions (“To what extent do you believe the consumer takes his/her psychiatric medication as prescribed,” and “To what extent do you believe the consumer’s psychiatric medication helps with his/her recovery from mental illness?”)

on the staff forms were significantly correlated with all four staff scale scores. These correlations ranged from a low of .23 to a high of .36.

Diagnosis.

Consumer and staff CROS 3.0 scale scores were contrasted among the three major diagnostic groups in the sample; schizophrenia, bi-polar, and depressive disorders. No significant differences by diagnosis were found in the case of Consumer Treatment Satisfaction, Consumer Daily Functioning, or Staff Hope for the Future. In all other cases, significant diagnostic differences in mean scores were found (see Table 5). Consumers with schizophrenia scored higher than consumers with bi-polar and depression on Consumer Hope for the Future, and Consumer Coping With Clinical Symptoms. Consumers with schizophrenia scored higher than consumers with depression on Consumer Quality of Life. Staff-judged Quality of Life was found to be significantly higher in the case of consumers with schizophrenia than in the case of consumers with bi-polar or depression. Staff-judged Coping With Clinical Symptoms was higher in the case of consumers with schizophrenia than consumers with bi-polar. Finally, staff-judged Daily Functioning was found to be lower in the case of consumers with schizophrenia than consumers with depression.

Insert Table 5 about here

Reliability of CROS 3.0

Two approaches are appropriate for assessing reliability of the consumer forms: internal consistency (obtained from the analysis of a single administration of each of the forms) and test-retest reliability (based on an analysis of two administrations of CROS 3.0 forms to the same sample). In the case of the staff forms, three approaches to reliability assessment are appropriate:

internal consistency, test-retest reliability, and inter-rater reliability (based on an analysis of scores obtained on each of the forms when independently completed by two judges) (American Educational Research Association, 1999, pp. 25 ff.).

The three sets of measures of CROS 3.0 reliability are reported in Table 6. The measures of internal consistency were derived from the analysis of the entire sample of cases. The measures of consumer test-retest reliability were derived from a subsample of 102 consumers who completed CROS 3.0 twice over a time span that averaged 8 days. The measures of staff test-retest reliability were derived from a subsample of 106 staff who completed CROS 3.0 twice over a time span that averaged 11 days. The measures of staff inter-rater reliability were derived from a group of 97 pairs of staff who completed CROS 3.0 within 6 days of each other, each pair rating the same consumer.

As noted, internal consistency and test-retest reliability measurements are satisfactory. Staff inter-rater reliability measures, however, are generally weaker – a finding that speaks to the necessity of providing careful training to staff.

Insert Table 6 about here

Concurrent Validity of CROS 3.0

Establishing the initial validity of a new psychological assessment instrument requires the presentation of evidence supporting the claim that the test provides a convincing measure of the variables it asserts to measure. Such evidence should demonstrate that scores on CROS 3.0 bear a significant but not redundant relationship with previously validated scores on related measures of clinical status.

Consumer Form of CROS 3.0

Two existing assessment instruments were chosen to examine their relationships with the consumer version of CROS 3.0. First, the Behavior and Symptom Identification Scale (BASIS-32) (Eisen, 1996), a commonly used self-report measure of clinical status, was selected. This scale is well established in the clinical outcome literature and assesses the magnitude of pathological symptom clusters. The BASIS-32 comprises five brief scales: Relationships to Self and Others (7 items); Depression and Anxiety (6 items); Daily Living and Role Functioning (9 items); Impulsive and Addictive Behavior (6 items); and Psychosis (4 items). In addition, a total score on the scale can be calculated. The relationship of each of the CROS 3.0 scales with each of the BASIS-32 scales was examined with special attention to the correlation between the CROS 3.0 Daily Functioning scale score and the BASIS-32 Daily Living and Role Functioning scale which was hypothesized to be of considerable magnitude.

The second selected instrument was the consumer version of the Wisconsin Quality of Life Index (WQLI) (Becker, Diamond, & Sainfort, 1993). Fourteen items on the client version of the WQLI were analyzed: twelve questions that assessed specific areas of life satisfaction, one general item that assessed overall quality of life during the past month and one item that assessed level of hope for an improved quality of life in the future. The analysis was based on a subset of 322 members of the original consumer group who had also completed the BASIS-32 and the consumer form of the WQLI.

An unrotated factor analysis of the 13 WQLI life quality items indicated that a single factor score was sufficient to describe this variable; all thirteen items were loaded on the first factor at a level of .54 or higher. Accordingly, a single score was computed by summing the responses to these 13 questions. Correlations of CROS 3.0 scale scores with the scores obtained from the BASIS-32 and the WQLI are shown in Table 7. In addition, the correlation of the WQLI Hope score with CROS 3.0 scores is shown.

Correlations of CROS 3.0 scale scores with BASIS-32 total and individual scale scores are relatively high with the exception of the CROS 3.0 measure of Treatment Satisfaction, a variable that is not assessed in either the BASIS-32 or WQLI. The two specific hypothesized relationships are confirmed. The BASIS-32 measure of Daily Living and Role Functioning is highly correlated with the CROS 3.0 measure of Daily Functioning and the CROS 3.0 measure of Hope for the Future is highly correlated with the similarly named single item scale on the WQLI.

Insert Table 7 about here

Staff Form of CROS 3.0

Two assessment instruments were examined in terms of their relationships to the staff version of CROS 3.0: the Brief Psychiatric Rating Scale (BPRS) (Faustman, 1994; Miller & Faustman, 1996; Overall & Graham, 1962), and the provider (staff) version of the WQLI (Diamond & Becker, 1999). The analysis was based on a subsample of 321 staff who completed the BPRS and the staff WQLI as well as CROS 3.0. Intercorrelations of the three test instruments are shown in Table 8. Correlations between the four CROS 3.0 scales and the BPRS and the WQLI are all substantially positive without suggesting that the same factors are being measured.

Insert Table 8 about here

Changes in CROS 3.0 Scale Scores Over Time

Changes in CROS 3.0 scale scores over time were examined in a sub-sample of 254 consumers and staff who completed the questionnaires on two occasions separated by an average interval of 196 days (range = 40-477 days). A sub-group of 107 consumers and staff also

completed the questionnaires a third time an average of 188 days (range = 30-479 days) after completing the second questionnaires. The demographic profile of the group that completed re-administrations of CROS 3.0 was very similar to the original cohort (n = 585) previously described.

Analyses of the changes over time are shown in Tables 9 and 10. Scale scores between the first and second test administrations as well as between the second and third test administrations were significantly correlated. All scores increased between the first and second test administrations. In two of the five scales on the consumer form (Coping with Clinical Symptoms and Quality of Life) and on all of the four scales of the staff form, the changes were statistically significant. Consumer scores on four of the five scales decreased slightly between the second and third test administrations, as did scores on two of the four scales on the staff form. No scale score changes between the second and third administrations of CROS 3.0 were statistically significant.

Insert Tables 9 and 10 about here

Discussion

The development and initial evaluation of CROS 3.0 has been described. The psychometric analysis reveals a number of strengths. First, the factorial structure of the instrument seems quite coherent and virtually identical in both the consumer and staff forms. Second, correlational analysis indicates that staff and consumer scale scores are significantly correlated with each other without being redundant. Factor scores within the consumer form as well as within the staff form are significantly correlated. Although the dimensions assessed by CROS 3.0 can be thought of independently of each other, strengths in one area tend to be accompanied with strengths in other areas.

Measures of reliability are quite satisfactory and initial measures of concurrent validity are encouraging. Finally, in spite of the low ceiling of many of the scales, significant improvements over time were noted on two of the five consumer scales and on all four of the staff scales.

Administration of CROS 3.0 takes only a few minutes and results can be presented in a variety of individualized and normative modes. Discrepancies between consumer and staff responses to items are easily identified and can be examined and discussed in a clinical setting.

Some problems with the scales have been revealed. Consumer scores are consistently and significantly higher than staff scores on all of the scales. That in itself would not constitute a serious problem except for the fact that consumer scores are strongly negatively skewed. In the case of several scales, notably Treatment Satisfaction, Quality of Life, and Hope for the Future, and to a lesser extent the remaining two scales, Daily Functioning and Coping with Clinical Symptoms, consumer scores are so high that there is limited room for significant improvement upon subsequent readministrations. The results regarding self-report of treatment satisfaction are consistent with overwhelmingly positive ratings of treatment satisfaction that have been repeatedly reported in previous research (Beigel & Torre, 1999; Lunnen & Ogles, 1999). While initial examination of changes over time has shown evidence of significant improvement on several of the consumer and staff scales, it may be increasingly difficult to find continued improvement.

While the low ceiling in consumer scores may be a function of the small number of items in each scale, that possibility does not seem likely. If consumers are unrealistic in their self-appraisal, lengthening the scales would not increase the likelihood that they would be more realistic in their judgments. A more persuasive hypothesis is that greater attention should be directed toward instructing consumers in how to interpret the rating alternatives available. Instructions to consumers might also stress that clinicians need consumers to provide frank appraisal of their clinical status in order to be most helpful. It is also possible that relabeling the

alternatives or illustrating the specific meanings of each of the alternatives may encourage consumers to make lesser use of extremely positive ratings.

CROS 3.0 appears to be a reliable measure. Internal consistency and test-retest reliability measures are robust. In the case of test-retest reliability, staff seem to be somewhat more consistent in their ratings than consumers. Inter-rater reliability measures are weaker; a result that is frequently remedied by increased training of staff in how to interpret response alternatives.

While recent reviews of the clinical assessment literature have underscored the importance of obtaining more than one perspective regarding the client, there is reason to believe that a third perspective, that of a friend, acquaintance, or relative, might add significantly to understanding the consumer's clinical status (Haaga & Stiles, 2000; Ingram, Hayes, & Scott, 2000). This additional perspective is especially pertinent in the context of a treatment program that seeks to expand the individual's self-identity and role beyond that of being only a mental health consumer. Treatment goals may include strengthening close personal relationships, participation in mutual support or advocacy programs, or involvement with larger social networks such as workplaces, volunteer organizations, church or spiritual groups, or civic institutions.

Thus, it might be especially useful if a third target group – family members, friends, or acquaintances – could be assessed using the same version of CROS 3.0 currently completed by staff. With the increasing interest in greater collaboration among consumers, clinical staff, and family members in establishing treatment goals and strategies (President's New Freedom Commission on Mental Health, 2003), greater attention might well be devoted to securing information from friends or family members regarding their perceptions of the clinical status of consumers.

Initial attempts at gathering such data have revealed a number of difficulties. Many consumers are estranged from family members and have few if any knowledgeable acquaintances. Some consumers wish to retain a certain level of privacy regarding their

psychiatric status and are reluctant to involve friends or family members in their treatment planning or evaluation. In addition, staff are sometimes hesitant to collect information from family or friends of consumers. Gaining the perspective of this third group of people remains an important endeavor.

The pattern of relationships between CROS 3.0 scale scores and the other already established related measures of psychiatric status suggests a high level of concurrent validity. Future studies of CROS 3.0 need to address the more demanding measures of predictive validity. These questions include: (1) How are CROS 3.0 scores related to treatment history? (2) Do improvements in CROS 3.0 scores signal recognizable clinical improvement or potential for clinical improvement? (3) Do patterns of CROS 3.0 scores provide useful clues for treatment planning? (4) How do clinical staff make use of CROS 3.0 in comparing their perceptions of the consumer's strengths and disabilities with the consumers' own assessments? Evidence of predictive validity would not only broaden the clinical utility of CROS 3.0 but would provide administrators with empirical data to assist in better allocating shrinking mental health service budgets and limited staff resources.

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Table 1. CROS 3.0 Consumer and Staff Descriptive Statistics

		Mean	Std. Dev.	Std. Error	Skewness	Median	Mode
Treatment Satisfaction	Consumer	17.26	2.68	0.11	-1.15	18	20
Hope for the Future	Consumer	21.70	4.79	0.2	-0.45	22	28
	Staff	18.74	4.07	0.17	-0.04	19	21
Daily Functioning	Consumer	24.16	4.79	0.2	-0.4	24	24
	Staff	22.10	4.59	0.19	-0.07	22	22
Coping with Clinical Symptoms	Consumer	17.38	3.89	0.16	-0.35	18	19
	Staff	16.58	3.03	0.13	-0.13	17	18
Quality of Life	Consumer	29.47	5.25	0.22	-0.75	30	36
	Staff	27.92	4.95	0.21	-0.5	28	27

Table 2. CROS 3.0 Consumer Scale Oblique Factor Solution

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Cons Q 1	-.126	-.078	.743	.083	.077
Cons Q 2	-.010	-.032	.743	.057	-.002
Cons Q 3	-.032	.034	.675	.021	.060
Cons Q 4	.039	.179	.696	-.157	.004
Cons Q 5	-.043	.036	.793	-.042	-.082
Cons Q 6	.642	-.031	.082	.021	.124
Cons Q 7	.669	-.033	.017	.080	.050
Cons Q 8	.784	-.032	.062	.016	-.026
Cons Q 9	.778	.0002	.099	-.012	.007
Cons Q 10	.901	.017	-.011	-.046	-.123
Cons Q 11	.834	.027	.032	-.024	-.046
Cons Q 12	.635	-.030	-.133	.088	.083
Cons Q 13	.309	.056	.010	.054	.486
Cons Q 14	.419	.003	.001	-.025	.460
Cons Q 15	.502	.015	-.050	.042	.281
Cons Q 16	.095	.043	-.045	-.106	.755
Cons Q 17	.110	-.037	.019	-.008	.635
Cons Q 18	-.162	-.049	.053	.063	.808
Cons Q 19	.417	.012	-.025	-.011	.271
Cons Q 20	.386	-.159	.125	.204	.190
Cons Q 21	.227	.004	-.001	.639	-.034
Cons Q 22	.222	.052	-.081	.669	-.038
Cons Q 23	-.182	-.0004	.122	.740	.154
Cons Q 24	.094	-.062	.053	.730	-.035
Cons Q 25	-.070	.133	-.0004	.679	.003
Cons Q 26	.00005	.037	-.004	.752	.063
Cons Q 27	-.080	.776	-.037	.079	-.053
Cons Q 28	.223	.496	.014	.167	-.069
Cons Q 29	.356	.367	-.005	.230	-.072
Cons Q 30	-.212	.854	-.009	-.060	.158
Cons Q 31	-.051	.801	.050	-.088	.062
Cons Q 32	.137	.323	.266	.148	-.189
Cons Q 33	-.080	.756	.042	-.030	-.021
Cons Q 34	.078	.388	.256	.023	-.061
Cons Q 35	.125	.387	.007	.311	-.048

Table 3. CROS 3.0 Staff Scale Oblique Factor Solution

	Factor 1	Factor 2	Factor 3	Factor 4
Staff Q 1	.558	-.015	.100	.189
Staff Q 2	.600	-.151	.069	.279
Staff Q 3	.706	-.009	-.00002	.173
Staff Q 4	.720	-.035	.126	.087
Staff Q 5	.719	.114	.032	.077
Staff Q 6	.782	.157	-.044	.00006
Staff Q 7	.454	-.090	.195	.208
Staff Q 8	.194	.083	.646	-.052
Staff Q 9	.189	.081	.583	.056
Staff Q 10	.599	.076	.233	-.263
Staff Q 11	-.113	-.008	.877	-.023
Staff Q 12	.081	-.008	.686	-.031
Staff Q 13	-.162	-.021	.794	.087
Staff Q 14	.264	.096	.460	-.096
Staff Q 15	-.057	.054	.666	.192
Staff Q 16	.277	.038	-.005	.599
Staff Q 17	.178	.016	-.004	.701
Staff Q 18	-.156	.238	.002	.658
Staff Q 19	.044	-.066	.148	.681
Staff Q 20	-.074	.059	.013	.708
Staff Q 21	.078	.149	.020	.641
Staff Q 22	.058	.739	.110	-.101
Staff Q 23	.535	.551	-.038	-.152
Staff Q 24	.546	.475	-.078	-.025
Staff Q 25	-.049	.819	.106	-.033
Staff Q 26	-.178	.833	.117	.104
Staff Q 27	.090	.533	-.038	.111
Staff Q 28	-.167	.824	.072	.055
Staff Q 29	-.014	.637	-.013	.067
Staff Q 30	.160	.407	-.085	.276

Table 4. CROS 3.0 Consumer and Staff Scale Intercorrelations

		Treatment Satisfaction	Hope for the Future		Daily Functioning		Coping with Clinical Symptoms		Quality of Life	
		Cons	Cons	Staff	Cons	Staff	Cons	Staff	Cons	Staff
Treatment Satisfaction	Cons	1.00	.40	.25	.39	.27	.39	.25	.45	.25
Hope for the Future	Cons	.40	1.00	.47	.72	.21	.65	.35	.56	.35
	Staff	.25	.47	1.00	.42	.59	.45	.67	.36	.54
Life Functioning	Cons	.39	.72	.42	1.00	.33	.58	.31	.51	.31
	Staff	.27	.21	.59	.33	1.00	.18	.46	.21	.44
Coping with Clinical Symptoms	Cons	.39	.65	.45	.58	.18	1.00	.51	.62	.39
	Staff	.25	.35	.67	.31	.46	.51	1.00	.41	.57
Quality of Life	Cons	.45	.56	.36	.51	.21	.62	.41	1.00	.56
	Staff	.25	.35	.54	.31	.44	.39	.57	.56	1.00

Table 5. Diagnostic Comparisons of CROS 3.0:

Mean Consumer and Staff Scale Scores Significant Diagnostic Comparisons

CROS 3.0 Scale		Schizophrenia Mean	Bipolar Mean	p	Schizophrenia Mean	Depression Mean	p
Consumer	Hope for the Future	22.45	20.85	<.004	22.45	20.82	<.002
	Coping with Clinical Symptoms	18.29	16.52	<.001	18.29	16.33	<.001
	Quality of Life				30.43	28.38	<.001
Staff	Daily Functioning				21.54	22.96	<.006
	Coping with Clinical Symptoms	17.01	16.06	<.002			
	Quality of Life	28.85	27.13	<.002	28.85	27.13	<.001

Table 6. Measures of Consumer and Staff CROS 3.0 Reliability

Scale		Internal Consistency	Test-Retest Reliability	Inter-rater Reliability
Consumer	Treatment Satisfaction	.79	.74	
	Hope for the Future	.90	.70	
	Daily Functioning	.83	.69	
	Coping with Clinical Symptoms	.86	.76	
	Quality of Life	.84	.75	
Staff	Hope for the Future	.89	.80	.53
	Daily Functioning	.86	.89	.47
	Coping with Clinical Symptoms	.85	.79	.62
	Quality of Life	.89	.87	.65

Table 7. Correlations of Consumer CROS 3.0 Scale Scores With Scores on the BASIS-32 and WQLI

CROS 3.0 Scales	BASIS-32 Total Score	BASIS-32 Relationships to Self and Others	BASIS-32 Depression and Anxiety	BASIS-32 Daily Living and Role Functioning	BASIS-32 Impulsive and Addictive Behavior	BASIS-32 Psychosis	Wisconsin Quality of Life Index (WQLI)	WQLI Hope for the Future
Treatment Satisfaction	.36	.35	.30	.33	.28	.26	.43	.33
Hope for the Future	.71	.70	.69	.72	.40	.41	.66	.65
Daily Functioning	.67	.62	.60	.70	.40	.43	.59	.55
Coping with Clinical Symptoms	.77	.72	.78	.71	.53	.51	.64	.51
Quality of Life	.59	.61	.56	.58	.34	.30	.73	.42

Table 8. Correlations of Staff CROS 3.0 Scale Scores With Scores on the BPRS and WQLI

CROS 3.0 Scales	Brief Psychiatric Rating Scale (BPRS)	Wisconsin Quality of Life Index (WQLI)
Hope for the Future	.52	.38
Daily Functioning	.54	.46
Coping with Clinical Symptoms	.63	.56
Quality of Life	.67	.46

Table 9. CROS 3.0 Scale Score Changes Over Time: Time 1 - Time 2 (N = 254)

		Time 1		Time 2		Difference	p	r
		Mean	S. D.	Mean	S.D.			
Consumer	Treatment Satisfaction	17.02	2.73	17.34	2.60	.32	NS	.49
	Hope for the Future	21.60	4.82	21.92	5.04	.23	NS	.65
	Daily Functioning	24.34	4.67	24.80	4.92	.46	NS	.57
	Coping with Clinical Symptoms	17.51	3.98	18.08	3.96	.57	<.02	.56
	Quality of Life	29.45	5.12	30.30	5.24	.85	<.01	.56
Staff	Hope for the Future	18.56	4.20	19.72	3.86	1.16	<.001	.53
	Daily Functioning	21.59	4.73	22.58	4.53	.99	<.001	.56
	Coping with Clinical Symptoms	16.43	3.43	17.32	3.08	.89	<.001	.59
	Quality of Life	28.20	4.91	28.88	5.04	.68	<.03	.53

Table 10. CROS 3.0 Scale Score Changes Over Time: Time 2 - Time 3 (N = 107)

		Time 1		Time 2		Difference	p	r
		Mean	S. D.	Mean	S.D.			
Consumer	Treatment Satisfaction	17.30	2.48	17.22	2.70	-.08	NS	.41
	Hope for the Future	22.22	4.69	22.04	4.71	-.18	NS	.65
	Daily Functioning	24.81	4.76	25.06	4.57	.25	NS	.56
	Coping with Clinical Symptoms	18.47	3.64	18.54	3.54	.07	NS	.49
	Quality of Life	31.14	4.97	30.67	5.24	-.47	NS	.53
Staff	Hope for the Future	20.35	4.03	20.55	3.43	.20	NS	.58
	Daily Functioning	22.56	4.56	23.02	4.20	.46	NS	.73
	Coping with Clinical Symptoms	18.08	3.12	18.49	2.76	.41	NS	.49
	Quality of Life	30.33	4.59	30.23	3.87	-.10	NS	.49